

Curriculum Vitae–Khulbe

Personal Information

- **Name:** Devashish Khulbe **Website:** devashishkhulbe.xyz
- **Email:** devashishk96@gmail.com **Google Scholar:** [profile](#)
- **Research Interests:** Graph Representation Learning, Applied Network Science, Urban Informatics, ML for Urban Systems

Education

- | | |
|---|---|
| Masaryk University
<i>Ph.D., Department of Mathematics and Statistics, Faculty of Science</i> | Brno, Czech Republic
Sept 2022-Current |
| New York University
<i>Master of Science in Applied Urban Science and Informatics</i> | New York, NY
Aug 2018 - Sep 2019 |
| Delhi Technological University
<i>Bachelor of Engineering in Electrical Engineering</i> | New Delhi, India
Aug 2014 - Aug 2018 |

Experience

- | | |
|---|---|
| Thales Group
<i>Research Internship - Thales Research and Technology (TRT)</i> | Paris, France
Jan 2025 - May 2025 |
| <ul style="list-style-type: none">◦ Semantic informed and Interpretable Deep Learning for Ontology-based datasets: At Thales R&D facility, I worked on conceptualization and development of Graph Neural Network models for ontology-based data modeling, while also developing methods to uncover interpretability in model's predictions. | |
| Masaryk University
<i>Researcher - Digital City Lab at the Faculty of Science</i> | Brno, Czech Republic
Sept 2022 - present |
| <ul style="list-style-type: none">◦ Research Focus (advisor: Dr. Stanislav Sobolevsky):<ul style="list-style-type: none">* Research on applied machine learning models on urban networks at the Department of Mathematics and Statistics* Primary focus is on using Graph Neural Networks (GNN) for applications in modeling complex networks. Past involved applications of probabilistic simulation models in urban science. | |
| Center for Urban Science + Progress (CUSP), NYU
<i>Research Assistant - Urban Complexity Lab and Machine Learning for Good Lab</i> | New York, NY
Jan 2019 - Dec 2019 & Mar 2020 - Aug 2022 |
| <ul style="list-style-type: none">◦ Research Focus: Worked on developing machine learning methods for urban applications with Dr. Stanislav Sobolevsky and Dr. Daniel B. Neill as advisors at CUSP.<ul style="list-style-type: none">* Worked on data driven research problems involving road safety analyses, urban mobility, and causal inference which incorporated variety of urban data sets and machine learning algorithms.* Closely worked on projects with Courant Institute of Mathematical Sciences, Center for Urban Science+Progress and NYU Wagner on building custom data sets using various APIs. | |
| McDevitt Lab, NYU Langone
<i>Research Associate</i> | New York, NY
Jan 2020 - Aug 2020 |
| <ul style="list-style-type: none">◦ ML based trauma fatality detection: Worked under Dr. John McDevitt in identifying critical trauma based bio-markers through data driven pattern recognition and developed machine learning models for fatality prediction on National Trauma Bank Data. | |

Teaching

Center for Urban Science + Progress (CUSP), NYU

Adjunct Instructor

New York, NY

2020 – 2022

- Principles of Urban Informatics
- Applied Data Science

Research Publications (Preprints and Published)

- **Khulbe, D.** & Laudy, C. (2025). Semantic Informed and Interpretable Graph Neural Networks for Ontology based data (*working paper with Thales*).
- **Khulbe, D.** & Sobolevsky, S., 2025. Urban delineation through the lens of commute networks: Leveraging graph embeddings to distinguish socioeconomic groups in cities. *arXiv preprint arXiv:2507.11057*.
- **Khulbe, D.**, Belyi, A. and Sobolevsky, S., 2025. Commute Networks as a Signature of Urban Socioeconomic Performance: Evaluating Mobility Structures with Deep Learning Models. *Smart Cities* 2025, 8(4), 125
- He, M., Bogomolov, Y., **Khulbe, D.**, & Sobolevsky, S. (2023). Distance deterrence comparison in urban commute among different socioeconomic groups: A normalized linear piece-wise gravity model. *Journal of Transport Geography*, 113, 103732.
- **Khulbe, D.**, Kang, C., Ukkusuri, S., & Sobolevsky, S. (2023). A probabilistic simulation framework to assess the impacts of ridesharing and congestion charging in New York city. *Data Science for Transportation*, 5(2), 8.
- **Khulbe, D.**, Belyi, A., Mikeš, O., & Sobolevsky, S. (2023). Mobility networks as a predictor of socioeconomic status in urban systems. *International Conference on Computational Science and Its Applications* (pp. 453-461).
- Bogomolov, Y., He, M., **Khulbe, D.**, & Sobolevsky, S. (2021). Impact of income on urban commute across major cities in US. *Procedia Computer Science*, 193, 325-332.
- Sourav, S., **Khulbe, D.**, & Verma, V. (2019). Modeling Severe Traffic Accidents with Spatial and Temporal Features. *Neural Information Processing: 26th International Conference, ICONIP 2019, Sydney, NSW, Australia, December 12–15, 2019, Proceedings, Part II* 26 (pp. 528-535).

Working Projects

- **Investigating transferability of deep learning based network embeddings:** This project seeks to build robust and transferable representations (embeddings) of networks, and further evaluating the network embeddings for real-world use cases.